

# 2015 Nutrition Environment Measures Survey

## Findings in Douglas County, Nebraska

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*Nutrition Environment Measures Survey Findings –  
Outcomes of Nutrition Environment Measures Survey (NEMS) in Douglas County, Nebraska’s  
Grocery and Convenience Stores, Summer 2015*

**Background**

The Douglas County Health Department (DCHD) recognizes the importance of access to healthy foods and its compelling influence on resident’s health. Since 2009 DCHD has conducted three Nutrition Environment Measures Survey (NEMS) assessments in retail food outlets (grocery and convenience stores). This report reviews the most recent findings from the assessment completed in the summer of 2015 and compares these findings to those attained in previous assessments. Appendix one outlines the methodology utilized in the three assessments as well as provides additional background information.

**2015 Nutrition Environment Measures Survey Assessment – Methods**

In the spring of 2015, DCHD repeated a Nutrition Environment Measures Survey (NEMS) assessment in Douglas County using the same instrument and methods as in previous assessments and is described in greater detail within Appendix 1. The Nebraska Department of Agriculture’s Food Division provided a list of 385 retail food outlets in Douglas County. Of the 385 stores identified 348 were observed with 30 stores being removed prior to data analysis for the following reasons; assessment was unable to be completed (e.g., seasonal, store closed, etc.) (20 stores), assessment tool was not received during data collection period (2 stores) and assessment was not appropriate for single item food or specialty food store (8 stores). Additionally, seven stores were not considered in final findings as their permit category did not align with the food offered in their establishment (i.e. corporate or larger convenience stores with little to no healthy options permitted as grocery).

The NEMS instrument is a point-in-time evaluation of the type, quality, quantity, and price of retail foods arranged through a simple scoring system. The “healthy access” score signifies the degree to which a retail food outlet provided access to healthy foods. Healthy access scores range from zero (no available options from the five food groups assessed) to five (choices available from each of the five food groups assessed) and were assigned to each store. Through an analytical process conducted by the Bureau of Sociological Research (BOSR) at the University of Nebraska-Lincoln (UNL) findings from the assessment were identified. The analytical results for each retail food outlet in relation to its score, pinpointed geographic areas of redundant and limited healthy food access. To assure consistent information, the project examined duplicated ratings in 10.2% (37) of stores to measure inter-rater reliability.

Trained community volunteers were recruited from the pool of individuals who had previous experience with completion of the assessment. Three training sessions were offered for nearly 30 community volunteers.

### **2015 NEMS Results**

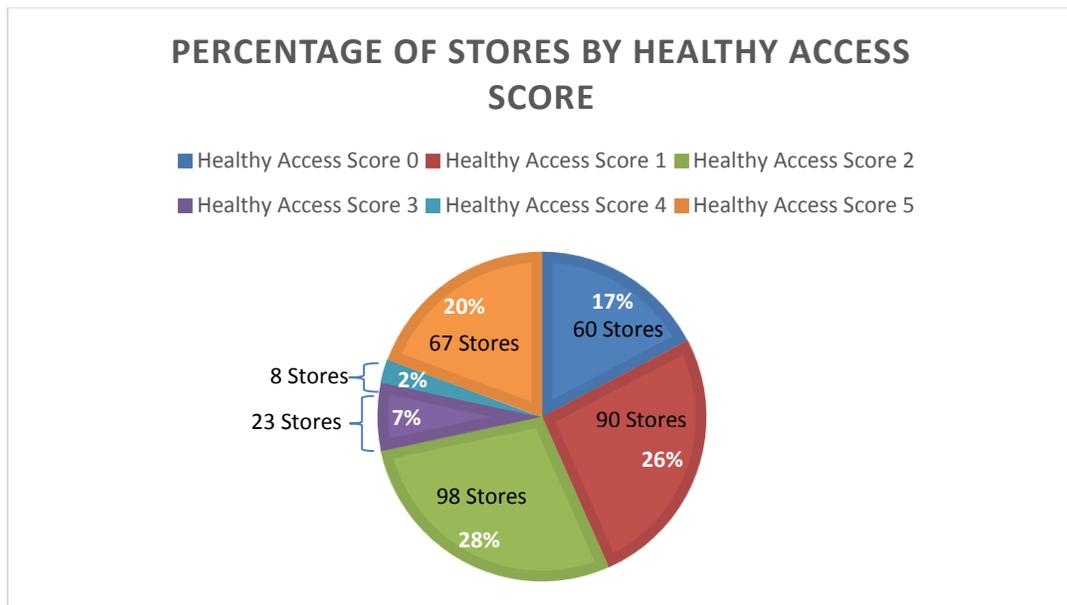
Retail food outlets healthy access scores are mapped using Health Impact Assessment (HIA) guidelines to demonstrate access to healthy foods. When the healthy access scoring system and buffer zones are combined, the result defines geographic areas where an individual can consistently purchase a full range of healthy foods within one mile from their home. The one-mile radius was an adequate distance measurement based current data indicating that Douglas County population distribution was equivalent to roughly 10,000 residents per square mile. Ultimately, this process demonstrates geographic areas of the community where healthy food access is duplicative and areas where healthy food option coverage is limited. Additional information on HIA methodology used can be found in Appendix 1.

As in previous assessments, examination of the data on a county wide level as well as inter-regionally is necessary. The results section examines these two focus areas to obtain a higher level of understanding of access to healthy foods for all residents.

### 2015 Countywide Findings

Of the 348 convenience and grocery stores that were observed, 67 stores scored a five in healthy access (i.e. met the criteria for healthy access in all five food groups [fruit, vegetables, milk, meat or meat alternatives, and whole grains]). Eight stores were identified with a healthy access score of “four”; 23 stores were identified as a “three”; ninety-eight stores as a “two”; 90 stores as a “one”; and 60 stores had no access to any of the five food groups. *Chart 1* illustrates the percentage and number of stores that fell within each healthy access score category.

*Chart 1.*



This data indicates that slightly more than a quarter (28.2% or 98 stores) of all retail food outlets assessed had adequate access to foods from three or more of the five food groups. The validity of these results was reviewed within the scope of reliability. Based on the inter-rater

comparisons, the mean reliability for the core variables in the data is 0.739. Kappa values approaching 1.0 with no missing items indicate strong agreement.

Healthy access is considered as areas where an individual can consistently purchase a full range of healthy foods within a mile from their home. To examine changes over time it is important to assess if the number and distribution of stores that received a healthy access score of five fluctuated in the six-year period between assessments. In 2009, 314 grocery and convenience stores in Douglas County were observed, while 348 were observed in 2015. The total number of stores observed increased by 34 stores and the number of stores with a healthy access score of five increased by nine. *Table 1* illustrates the increase of stores that provide adequate (healthy access score of three or higher) access to healthy foods and a decrease of stores that have little to no healthy options available (healthy access score of one or zero) over the six year period.

*Table 1.*

	2009	2012	2015	6 Year Difference
<b>“0” Health Access (HA) Score</b>	71	65	62	-9
<b>“1” (HA) Score</b>	107	108	90	-17
<b>“2” (HA) Score</b>	48	63	98	50
<b>“3” (HA) Score</b>	24	25	23	-1
<b>“4” (HA) Score</b>	6	5	8	2
<b>“5” (HA) Score</b>	58	66	67	9
<b>Total Observed</b>	314	332	348	34

Healthy access score results were mapped and they identified areas where there is redundancy in access as well as where a single outlet provides the access or coverage. *Map 1* depicts the change in access to healthy foods over the six-year period between assessments. The

green circles on *Map 1* represent stores that have aided in decreasing the total number of square miles where access is limited. Additionally, areas covered only by a brown circle represent locations where additional strategies should be investigated to support gaps in access due to the loss of a retail food outlet that provided full access.

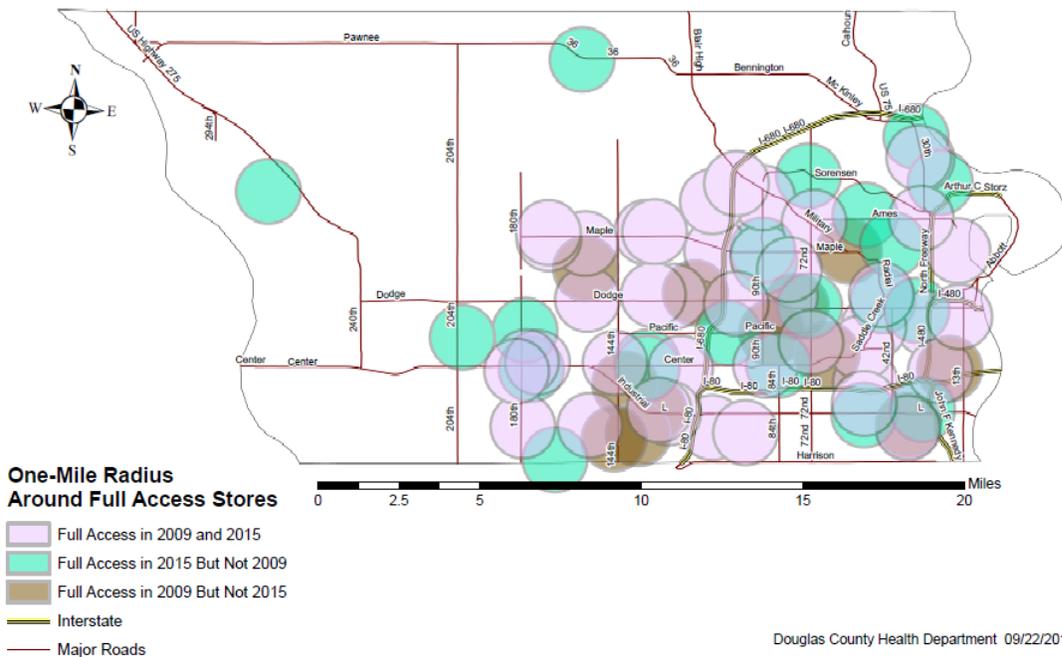
GIS mapping calculated an increase of approximately 23 square miles of additional healthy food access from 2009 (99 square miles) to 2015 (122 square miles)<sup>1</sup>. It should be noted that in a neighborhood where a single store provides healthy food access, a store closing or changes in business plans resulting in a decreased healthy access score can lead to a complete lack of access for residents living within a mile of that store.

*Map 1.*



## Nutrition Environment Measures Survey

### Full Access Stores (Healthy Access Score of 5) 2009 and 2015 Douglas County, NE

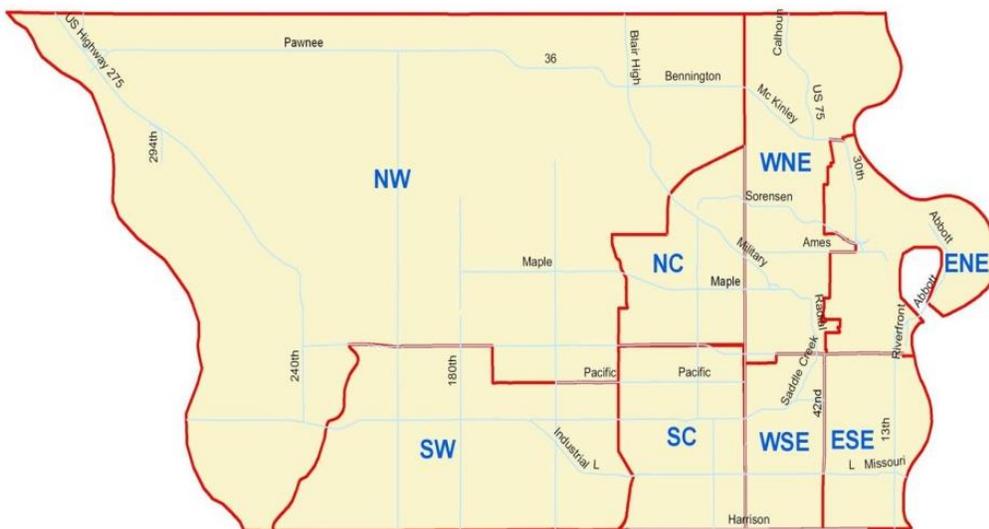


<sup>1</sup> Assessment of square mile coverage in 2015 identified 99 square miles in 2009, 116 in 2012 and currently 122. These findings are slightly lower than previously reported in 2012 due to inclusion of coverage areas that extended into Saryp County.

## Inter-Regional Findings

Region-specific comparison data show that the percentage of retail food outlets with an overall healthy access score of three or greater increased from 2009 to 2015 within four of the eight regions of the county. Specifically, the East-Northeast (24.3% vs. 30.2%), West-Northeast (18.7% vs. 25%), South Central (15.3% vs. 23.3%), and Southwest (31.4% vs. 36.8%) regions saw increases in the percentage of retail food outlets with access to healthier foods. The North Central region saw an increase in the number of stores with healthy access scores of three or more however the percentage or proportion of these stores versus lower access scores dropped slightly (28.8% vs. 26.2). The Douglas County Nebraska Region Map (*Map 2*) identifies the boundaries of the eight regions discussed in this report. *Table 2* identifies the number and percentage of stores that were assessed as having a healthy access score of three or greater from the 2009 and 2015 NEMS assessment. Two regions showed a decline in the total numbers of stores with healthy access scores of three and higher over the six year period. Further examination of these two regions is needed to identify feasible solutions to increase access to stores that offer a variety of healthy choices.

**Map 2. Douglas County Nebraska Region Map**



**Table 2. Inter Regional Access – Number and Percentage of Retail Food Outlets with a Healthy Access Score of 3 or Higher**

<b>Region</b>	<b>2009</b>	<b>2012</b>	<b>2015</b>	<b>6 Year Change</b>
<b>East-Northeast (ENE)</b>	9 (24.3%)	11 (26.8%)	13 (30.2%)	+4
<b>West-Northeast (WNE)</b>	3 (18.7%)	3 (15%)	5 (25%)	+2
<b>East-Southeast (ESE)</b>	21 (30%)	20 (28.5%)	18 (26%)	-3
<b>West-Southeast (WSE)</b>	7 (36.8%)	8 (42.1%)	6 (31.5%)	-1
<b>North Central (NC)</b>	15 (28.8%)	18 (31.5%)	16 (26.2%)	+1
<b>South Central (SC)</b>	4 (15.3%)	3 (10%)	7 (23.3%)	+3
<b>Northwest (NW)</b>	12 (30%)	15 (33.3%)	12 (24.4%)	0
<b>Southwest (SW)</b>	17 (31.4%)	18 (36%)	21 (36.8%)	+4

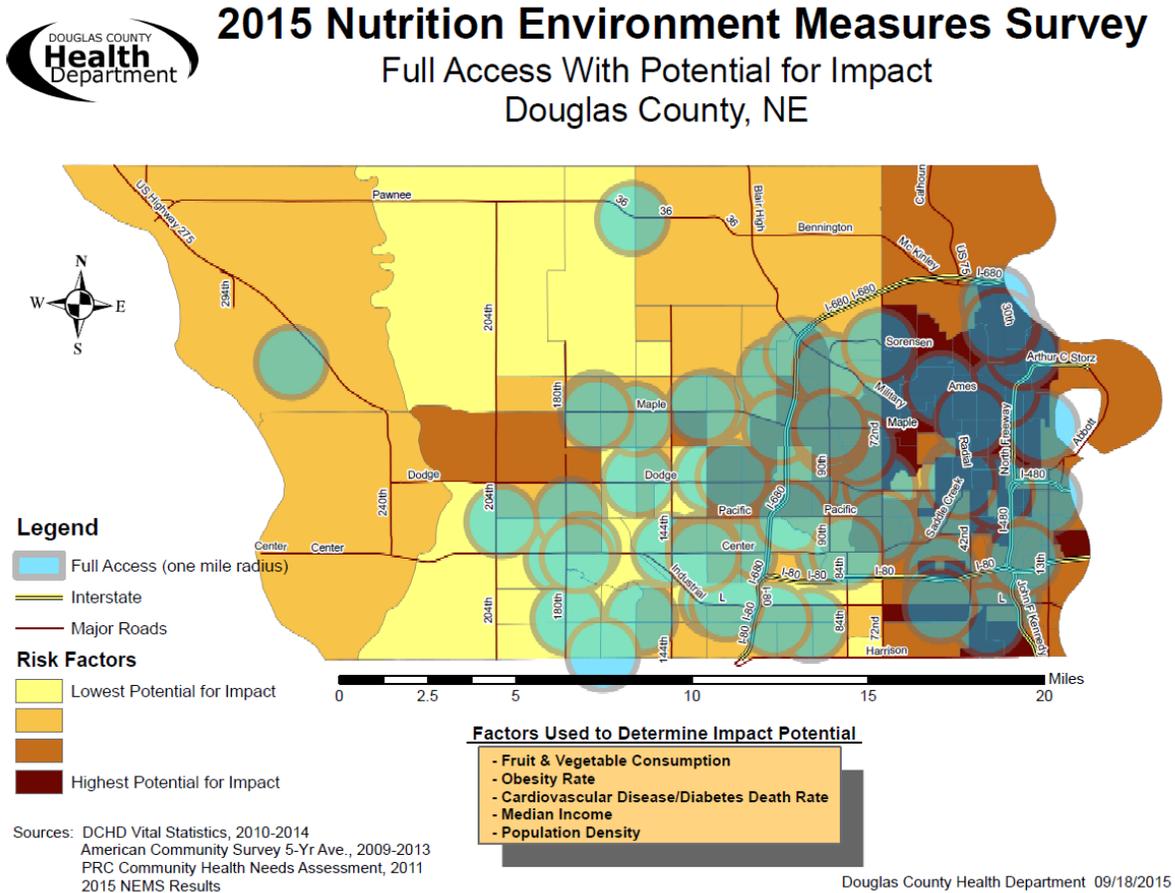
### **Interpretation of Findings**

According to the United States Department of Agriculture (USDA), food deserts are defined as urban neighborhoods and rural towns without ready access to fresh, healthy, and affordable foods. Over the past six years NEMS assessment data has identified distinct areas in Douglas County where access to healthy foods is limited and therefore deemed a food desert. However, these past three assessments have shown fluctuation in the size of previously identified areas and a positive trend of continued decreases in the number of square miles where access is limited.

In order to ensure continued design of impactful, community centered solutions and resource allocation accordingly GIS mapping was completed with 2015 NEMS data. Five previously identified potential contributing factors; income, population density, death rates from cardiovascular disease and diabetes, obesity rates, and fruit and vegetable intake were utilized to create potential for impact maps. Areas where these factors were the most detrimental (e.g.

highest obesity rate, lowest fruit and vegetable intake, etc.) were considered as having the greatest need for interventions because they were already experiencing negative health outcomes. A map that layered the contributing factors and the one-mile Health Impact Assessment buffer provided a more concise picture of areas with the greatest potential for impact (*Map 3*).

*Map 3.*



## Recommendations

Findings from the 2015 Nutrition Environment Measures Survey solidify and reinforce the findings from previous assessments. The three recommendations from the 2012 assessment continue to be the focus for future efforts to assure that all Douglas County residents have access to healthy foods:

1. Maintain and/or improve locations of healthy food retail outlets particularly in areas with no access or limited access.

In areas where no healthy food retail outlets are available intense strategies have been utilized to engage stores into initiatives, such as the Healthy Neighborhood Store project, focused on increasing access to healthy foods. Between 2010 and 2011 eight retail food outlets were participating in this project. From 2012 to date an additional two store joined the initiative. Additionally, new entrepreneurs have connected with project staff to begin to replicate project strategies in their stores. Expansion of the existing strategies into small to medium sized chain stores is necessary to investigate the feasibility of implementation into larger stores business model. This next phase will begin in early 2016.

2. Maintain and/or increase the quality and selection of healthy foods in existing retail stores with moderate healthy access scores (3's and 4's).

To date a number of evidence-based initiatives have been implemented in stores where access to healthy foods is limited. In an effort to increase access to healthy foods, particularly fresh fruits and vegetables, four stores within limited access areas have been identified to implement farm to store strategies in 2016. The resulting effect will be the establishment of a connection of networks between producers and store owners for systematic change.

Examination of additional strategies such as buying consortiums, food hubs, and modification to distributor practices to impact quality and selection are necessary to ensure that all components of the food system are supporting increased access to healthy food options. Community focus groups and surveys assure neighborhood preferences are identified and that new partnerships are developed to implement selected strategies. Regional specific trend data should be considered in identification of strategies. Additionally, areas where there is only one

store with adequate healthy food options, the healthy food capacity of that store should be maintained or if needed increased. Recruitment of additional stores with healthy food options should occur if necessary.

3. Monitor healthy food access and fluctuations using NEMS assessments to measure the impact of strategic efforts to improve food access.

With the completion of the third NEMS assessment the mechanism for data collection and analysis has been honed. Based on the compilation of information gained over the past six years trend data can begin to be examined and subsequently be utilized in shaping future initiatives and focus areas.

Following these recommendations would assure countywide access to healthy foods and address potential health disparities

### **Conclusion**

In summary, from 2009 to 2015 there was a moderate increase (58 in 2009 to 67 in 2015) in the total number of retail food outlets with a healthy access score of five (i.e. outlets that provide adequate quality and quantity of healthy foods from the five food groups examined [fruits, vegetables, milk, whole grains, and lean meats]). Douglas County saw a decrease in the number of square miles of the county where access to healthy food is limited. From 2009 to 2015 there was an increase of roughly 23 square miles of access to healthy foods. It should be noted that the 2015 NEMS assessment continued to reinforce the importance of redundancy within geographic areas. This is evident on *Map 1* which illustrates how the loss of a single store can create a gap in access due to the lack of surrounding stores with a healthy access score of five to maintain coverage in the area.

The information that has been gained as a result of the three NEMS assessments over the past six years has caused a shift in Douglas County. Initial strategies to overcome lack of access was focused on a variety of projects (Healthy Neighborhood Store, WIC Farmers Market Nutrition Program, etc.) however over recent years there has been a move towards system changes to impact access. Community residents, partners and stakeholders have adopted concepts from existing efforts and worked to expand the positive outcomes associated across the community. Strategies to impact access to healthy foods span across a number of sectors that include public health, private businesses, non-for profits, producers and academia.

A secondary report outlining 2015 NEMS findings regarding supplemental nutrition programs (Supplemental Nutrition Assistance Program and Women, Infants and Children) will be released in January 2016. This report was made possible by funding from the Department of Health and Human Services.

*Nutrition Environment Measures Survey Findings - Supplemental Nutrition Assistance Program (SNAP) and Special Supplemental Nutrition Program for Women, Infants and Children (WIC)*  
*Healthy Food Access in Douglas County, Nebraska*

## **Background**

Food assistance programs affect the daily lives of millions of Americans. The majority of food assistance in the United States is provided by the Supplemental Nutrition Assistance Program (SNAP), the Special Supplemental Nutrition Program for Women, Infants and Children (WIC), and child nutrition programs<sup>2</sup>. These programs can make a significant impact in the nutritional health of an individual who may be at risk for poor nutritional intake due to their socioeconomic status by providing funds for food products<sup>3</sup>. The Food and Nutrition Service (FNS) of the United States Department of Agriculture (USDA) works to end hunger and obesity through the administration of 15 federal nutrition assistance programs including SNAP, WIC, and school meals<sup>4</sup>.

SNAP offers nutrition assistance to millions of eligible, low-income individuals and families as well as provides economic benefits to communities. SNAP is the largest program in the domestic hunger safety net and provides resources to purchase foods for participants to eat such as grains, produce, meats, and dairy products<sup>5</sup>. SNAP eligibility dictates that participants meet certain requirements pertaining to resources, income, deductions, and employment. SNAP recipients are able to choose a variety of food options when using their benefits as there are no requirements for the type and quantity of food items purchased. The only restrictions are that

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<sup>2</sup> United States Department of Agriculture Food and Nutrition Service. (n.d.). About FNS. Retrieved from <http://www.fns.usda.gov/about-fns>

<sup>3</sup> Morland, K., Wing, S., Diez Roux, A., & Poole, C. (2002). Neighborhood characteristics associated with the location of food stores and food service places. *American Journal of Preventive Medicine*, 22(1), 23-29

<sup>4</sup> Fox, M. K., Hamilton, W., & Lin, B-H. (2004, October). Effects of Food Assistance and Nutrition Programs on Nutrition and Health. Retrieved from <http://www.abtassociates.com/AbtAssociates/files/c1/c1f8d054-3ed4-46a6-8ae0-b71672e61502.pdf>

<sup>5</sup> Story, M., Kaphingst, K. M., Robinson-O'Brien, R., & Glanz, K. (2008). Creating Healthy Food and Eating Environments: Policy and Environmental Approaches. *Annual Review of Public Health*, 29, 253-272.

benefits cannot be used to purchase alcohol, tobacco, non-food items (paper products, vitamins, etc.), food that will be eaten in the store, and hot foods. In July 2015, 45,507,072 individuals participated in the SNAP program across the United States, with nearly 175,000 Nebraskans enrolled in the program receiving on average \$126.43/person each month.

The mission of the Special Supplemental Nutrition Program for Women, Infants and Children (WIC) program is to safeguard the health of nutritionally at-risk low-income women, infants, and children up to age five. The program provides nutritious supplemental foods, information on healthy eating, and referrals to health care<sup>6</sup>. Federal grants to states support the program's mission by providing supplemental foods, health care referrals, and nutrition education for low-income pregnant, breastfeeding, and non-breastfeeding postpartum women and to infants and children. Eligibility for this program is based on gross income, which must fall at or below 185 percent of the U.S. Poverty Income Guidelines, as well as having an identified nutritional risk factor<sup>7</sup>. Only certain food items in stated quantities, determined by the category (woman, child, or infant) of the participant, can be purchased with WIC vouchers. Approved WIC foods include fruits and vegetables, whole grain cereals, breads and tortillas, canned fish, peanut butter, juice, milk, cheese, eggs, infant formula, and infant baby food (fruits/vegetables and meats). Nationally, nearly 8 million women and children were participating in the WIC program in July 2015 with nearly 37,000 participants in Nebraska and 13,930 in Douglas County, which represents nearly three percent of the total population of the county.

Examining retail food outlets that accept federal assistance programs such as SNAP and WIC investigates convenience of location with actual ability to purchase and creates a robust

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<sup>6</sup> United States Department of Agriculture Food and Nutrition Service. (n.d.). About FNS. Retrieved from <http://www.fns.usda.gov/about-fns>

<sup>7</sup> United States Department of Agriculture Food and Nutrition Service. (n.d.). Supplemental Nutrition Assistance Program (SNAP). Retrieved from <http://www.fns.usda.gov/snap/supplemental-nutrition-assistance-program-snap>

description of access. The Douglas County Health Department (DCHD) conducted a retail food assessment in the summer of 2015. This report will discuss the outcomes of the 2015 Nutrition Environment Measures Survey (NEMS) completed in Douglas County, Nebraska in SNAP and WIC approved vendors.

### **2015 Nutrition Environment Measures Survey Findings**

Three hundred and forty-eight retail food outlets were assessed using a modified Nutrition Environment Measures Survey (NEMS) assessment tool. The NEMS instrument is a point-in-time evaluation of the type, quality, quantity, and price of foods arranged into a simple scoring system. The “healthy access” (i.e. the number of healthy food choices in each of five food groups – fruits, vegetables, whole grains, low-fat milk, and lean meat) scoring criteria identified the degree to which a retail outlet provided full access to healthy foods. Healthy access scores range from zero (no available options from the five food groups assessed) to five (choices available from each of the five food groups assessed) and were assigned to each store assessed. *Chart 1* provides a breakdown of the number of SNAP and WIC approved vendors that received a healthy access score from “zero” to “five”.

Of the 348 stores assessed, 243 stores (69.8%) were currently a SNAP approved vendor. Comparisons were conducted for SNAP approved retailers and non-SNAP approved vendors included in the sample. Differences in the number of SNAP approved vendors and their healthy access scores within the eight regions of the county were also examined. *Table 1* shows that one-fourth (25.3%) of SNAP approved retailers received a healthy access score of “five”. This is a decrease from findings from the 2012 NEMS assessment (32.1% in 2012 vs. 25.3% in 2015). Additionally, over 64 percent of SNAP approved stores received a healthy access score of “two” or less, an increase since the 2012 assessment. This finding suggests that residents who frequent

low-rating stores may have difficulty using their SNAP benefits to purchase a variety of healthy foods.

Table 1. Healthy Access Scores for Non-SNAP and Approved SNAP Retailers

<i>healthyaccess</i>		<b>Non-SNAP Retailer (0)</b>	<b>Approved SNAP Retailer (1)</b>	<b>Total</b>
<b>No healthy categories (0)</b>	Count	37	25	62
	% within SNAP	35.2%	10.2%	17.8%
<b>One healthy category (1)</b>	Count	28	62	90
	% within SNAP	26.6%	25.5%	25.8%
<b>Two healthy categories (2)</b>	Count	30	68	98
	% within SNAP	28.5%	27.9%	28.1%
<b>Three healthy categories (3)</b>	Count	5	18	23
	% within SNAP	4.7%	7.4%	6.6%
<b>Four healthy categories (4)</b>	Count	1	7	8
	% within SNAP	0.9%	2.8%	2.2%
<b>All five healthy categories (5)</b>	Count	4	63	67
	% within SNAP	3.8%	25.9%	19.2%
<b>Total</b>	Count	105	243	348
	% within SNAP	100.0%	100.0%	100.0%

Healthy access availability in SNAP vendors is more noticeable when regions of the county are compared. *Table 2* shows healthy access scores for SNAP approved vendors in the geographic regions of the county. Out of the eight regions none had greater than 50 percent of SNAP approved stores receiving healthy access scores of “three” or greater which may be causing increased challenges for SNAP recipients in accessing healthy options. The Northwest (42.8%) and West Southeast (38.4%) regions of the county had the highest percentage of SNAP approved stores with a healthy access score of “five”. The East Southeast (7.8%) and West Northeast (12.5%) regions of the county had the lowest percentage of SNAP stores with access to all five healthy categories.

Table 2. Overall Healthy Access in 5 Categories (Fruits, Vegetables, Grains, Meat/Alt, Milk) by Region of Douglas County for SNAP Stores Only

<i>healthyaccess</i>	East Northeast	West Northeast	East Southeast	West Southeast	North Central	South Central	Northwest	Southwest	Total
<b>No healthy categories (0)</b>	5 (15.6%)	2 (12.5%)	13 (25.4%)	1 (7.6%)	2 (4.5%)	1 (5.5%)	1 (3.5%)	0 (0.0%)	25
<b>One healthy category (1)</b>	5 (15.6%)	5 (31.2%)	15 (29.4%)	2 (15.3%)	10 (22.7%)	4 (22.2%)	9 (32.1%)	12 (29.2%)	62
<b>Two healthy categories (2)</b>	9 (28.1%)	4 (25.0%)	11 (21.5%)	4 (30.7%)	17 (38.6%)	6 (33.3%)	6 (21.4%)	11 (26.8%)	68
<b>Three healthy categories (3)</b>	2 (6.2%)	3 (18.7%)	4 (7.8%)	1 (7.6%)	2 (4.5%)	3 (16.6%)	0 (0.0%)	3 (7.3%)	18
<b>Four healthy categories (4)</b>	1 (3.1%)	0 (0.0%)	4 (7.8%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (4.8%)	7
<b>All five healthy categories (5)</b>	10 (31.2%)	2 (12.5%)	4 (7.8%)	5 (38.4%)	13 (29.5%)	4 (22.2%)	12 (42.8%)	13 (31.7%)	63
Total	32	16	51	13	44	18	28	41	243

Of the 348 retail food outlets assessed, 56 (16.0%) of the vendors were approved to accept WIC vouchers for healthy foods. *Charts 3* and *Table 4* below compare WIC approved retailers to their non-WIC approved counterparts across the county as a whole, as well as by region. Due to stringent vendor requirements, over ninety-six percent of WIC approved retail food outlets provide access to all five food groups, with the remaining stores providing access to four of the five groups. These findings are nearly identical to findings from the 2012 NEMS assessment.

Chart 3. Overall Healthy Access in 5 Categories (Fruits, Vegetables, Grains, Meat/Alt, Milk) by WIC Designation

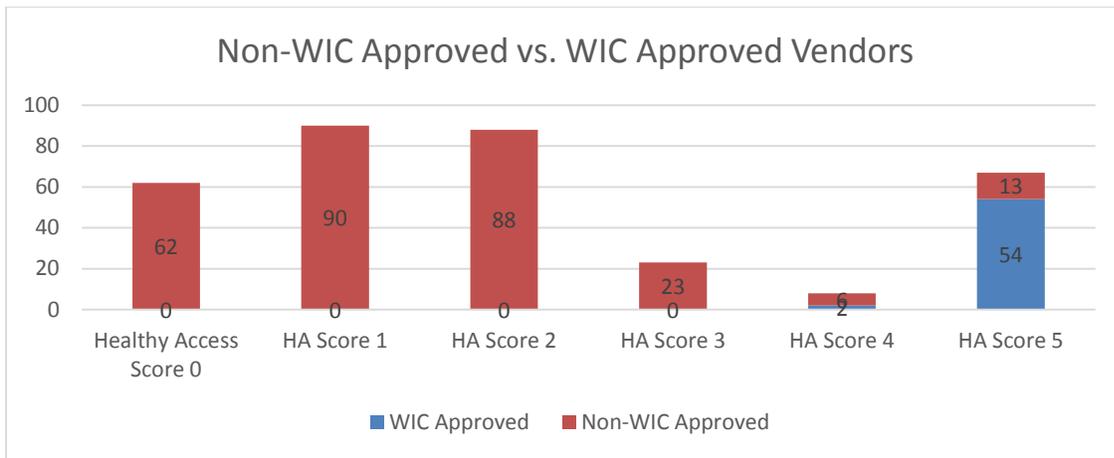


Table 4. Overall Healthy Access in 5 Categories (Fruits, Vegetables, Grains, Meat/Alt., Milk) by Region of Douglas County for WIC Store Only.

healthyaccess	East Northeast	West Northeast	East Southeast	West Southeast	North Central	South Central	Northwest	Southwest	Total
<b>Four healthy categories (4)</b>	0 (0.0%)	0 (0.0%)	1 (50%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (50%)	2
<b>All five healthy categories (5)</b>	7 (12.9%)	2 (3.7%)	4 (7.4%)	5 (9.2%)	10 (18.5%)	3 (5.5%)	10 (18.5%)	13 (24.0%)	54
Total	7	2	5	5	10	3	10	14	56

In an effort to understand more about the areas of the county where potential contributing circumstances could contribute to negative health outcomes five factors were examined; income, population density, death rates from cardiovascular disease and diabetes, obesity rates, and fruit and vegetable intake. Areas where these potential contributing factors were the most detrimental (e.g. highest obesity rate, lowest fruit and vegetable intake, etc.) were considered as having the greatest potential for impact. The resulting map (*Map 1*), which measures communitywide access to healthy foods, consists of the layered contributing factors and a one-mile Health Impact Assessment (HIA) buffer to provide a more concise picture of areas with the greatest potential for impact. *Map 1* identifies distinct areas where access is limited and therefore it may be more difficult for residents and nutrition assistance program participants to obtain healthy foods.

Residents that reside in these areas have to travel greater than one mile to access healthy foods from a WIC and/or SNAP approved vendor that carries all five of the healthy food options examined (fruits, vegetables, whole grains, low-fat milk, and lean meat).

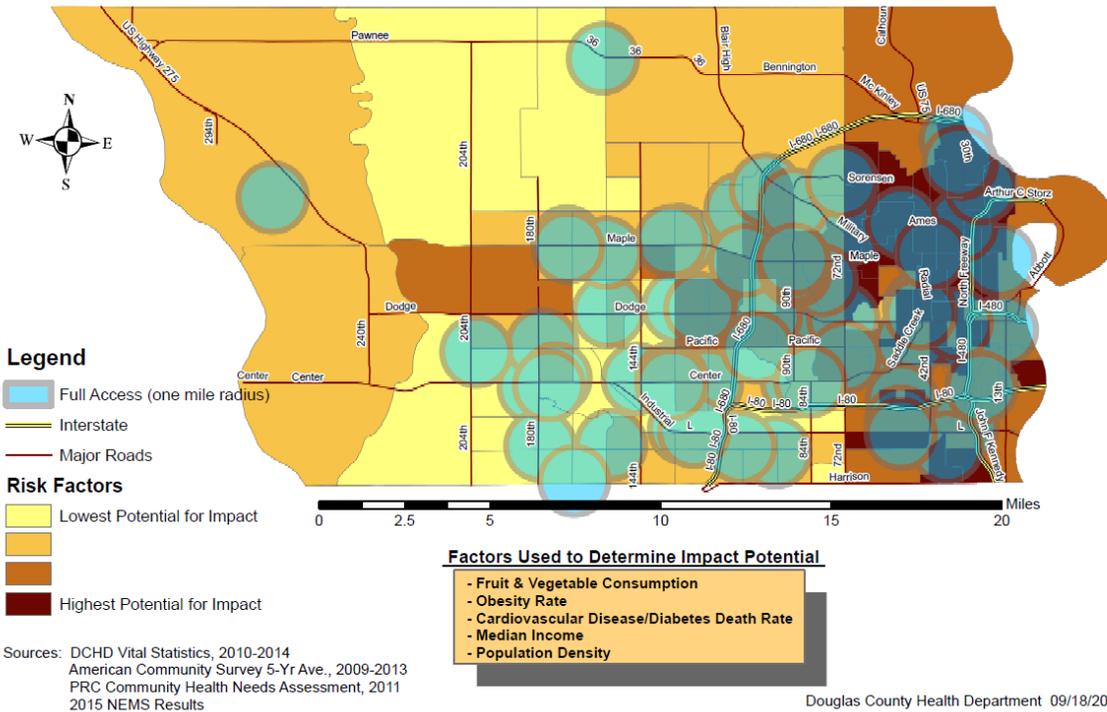
Map 1



## 2015 Nutrition Environment Measures Survey

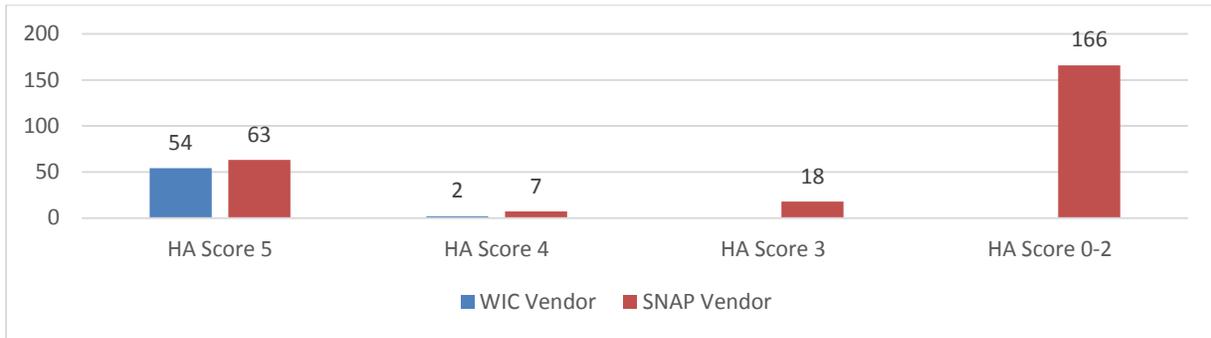
### Full Access With Potential for Impact

#### Douglas County, NE



Both the 2012 and 2015 NEMS assessment resoundingly convey great differences in the allocation of SNAP and WIC approved vendors and their healthy access score (i.e. over 96 percent of WIC approved vendors have adequate access to healthy food options while among SNAP vendors less than half of vendors offer adequate access to healthy food options). *Chart 1* illustrates this difference and highlights the high number of SNAP approved vendors with healthy access scores of two or less.

Chart 1. Number of SNAP and WIC Vendors by Healthy Access Score



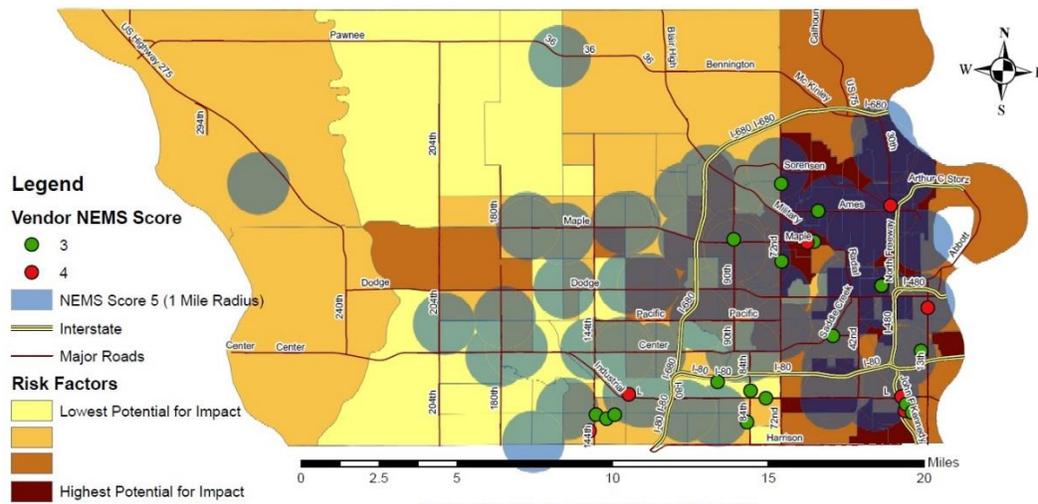
Map 2 identifies SNAP approved vendors with existing capacity (healthy access scores of three or higher) to carry a limited number of healthy options. This map provides a better understanding of the location of SNAP approved vendors with existing capacity in relation to the identified food deserts. These stores, particularly within the West Northeast and East Southeast, should be prioritized as strategies are developed and implemented to increase access healthy food options.

Map 2



### Vendors That Accept SNAP With NEMS Score 3 - 5

Potential for Impact  
Douglas County, NE



**Factors Used to Determine Impact Potential**

- Fruit & Vegetable Consumption
- Obesity Rate
- Cardiovascular Disease/Diabetes Death Rate
- Median Income
- Population Density

Sources: DCHD Vital Statistics, 2010-2014  
American Community Survey 5-Yr Ave., 2009-2013  
PRC Community Health Needs Assessment, 2011

## **Recommendation**

1. Educate and encourage non-approved WIC and/or SNAP vendors with a healthy access score of “four” or “five” to achieve approved vendor status.
2. Implement strategies to increase the number of SNAP approved vendors within the West Northeast and East Southeast regions that have a healthy access scores of five by 10%.
3. Monitor current SNAP and/or WIC vendors rated with a healthy access score of a “five” to assure continued healthy status.
4. Promote systematic change to existing SNAP regulations that ensure that all SNAP vendors achieve a healthy access score of three or higher.

To move these recommendations forward and assure that the retail food environment in Douglas County reinforces nutrition assistance programs by providing healthy food options next steps include:

1. Convene community stakeholders (e.g. pantries, community supported agriculture [CSA], and single food access outlets) and based on input identify a pilot intervention aimed at increasing utilization of SNAP funds for the purchase of healthy food options. This process will begin to identify specific strategies that can influence consumer purchasing practices and environmental cues within the retail store environment.
2. Investigate the density of nutrition assistance program participants in relation to identified food deserts to pinpoint areas where participants may be experience access challenges.
3. As needed, consider a public policy action plan that encourages retail food outlets that are WIC and SNAP approved to provide healthy food options consistent with at least a NEMS healthy access score of “three” or “four”.

## Conclusion

Nutrition assistance programs provide resources to individuals at times of greatest need. Both the SNAP and WIC programs have a critical role in improving the health and decreasing hunger, especially among the most vulnerable. Research has found the diets of neighborhood residents to be healthier when the supermarket or retail food outlet in their neighborhood offered more healthful products<sup>8</sup>. It is critical that nutrition assistance program participants have adequate access to a variety of healthy foods in order to maximize the health benefits they receive from these programs.

The 2015 NEMS assessment is part of the work of the Center for Disease Control and Prevention's State and Local Public Health Actions to Prevent Obesity, Diabetes, and Heart Disease Stroke Grant.

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<sup>8</sup>United States Department of Agriculture National Agricultural Library. (n.d.). Nutrition Assistance Programs. Retrieved from <http://fnic.nal.usda.gov/nutrition-assistance-programs>

## **Appendix 1.**

### **Douglas County Nutrition Environment Measures Survey Assessment – Background**

Public health research suggests that the retail food environment of a neighborhood – the presence of grocery stores, small markets, street vendors, local restaurants, and farmers markets – plays a key role in determining its residents’ access to healthy foods. Availability of healthy food options is associated with increased consumption of those products<sup>9</sup>. Therefore access to healthy foods has a compelling influence on individual health. It is reported that residents with limited access often have less healthy diets and an increased risk of diet-related diseases, specifically obesity and diabetes<sup>10</sup>. The same neighborhoods often contain increased access to alcohol and tobacco, which only adds to the health risk<sup>11</sup>. Research reflects that improving healthy food access can also create an environment that supports living wage jobs, raises property values, and attracts other businesses<sup>12</sup>. National agencies and associations such as the Center for Disease Control and Prevention (CDC), the Institute of Medicine (IOM), and the American Heart Association (AHA) have recognized healthy food access as an essential strategy to reduce obesity and improve the public’s health. Access to healthy foods is not the lone solution to the complexities of the obesity epidemic, nonetheless it does allow for community residents to make easy and healthy choices regarding their diets.

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<sup>9</sup>Cheadal, A., Psatry, B., Curry, S., Wagner, E., Diehr, P., Koepsell, T., & Kristal, A. (1991). Community-level comparisons between the grocery store environment and individual dietary practices. *Preventive Medicine*, 20(2), 250-261.

<sup>10</sup>Morland, K., Wing, S., & Diez Roux, A. (2002). The contextual effect of the local food environment on residents' diets: the atherosclerosis risk in communities study. *American Journal of Public Health*, 92(11), 1761-1767

<sup>11</sup> Public Health Law & Policy. (2009). Healthy corner stores: State of the movement. Retrieved from <http://changelabsolutions.org/sites/default/files/documents/HCSRreport.pdf>

<sup>12</sup> Public Health Law and Policy. (2012). Getting to grocery; tools for attracting healthy food retail to underserved neighborhoods. Retrieved from [http://changelabsolutions.org/sites/default/files/documents/Getting\\_to\\_Grocery\\_FINAL\\_20120514.pdf](http://changelabsolutions.org/sites/default/files/documents/Getting_to_Grocery_FINAL_20120514.pdf)

Through measuring and monitoring of food access over time, public health practitioners can monitor change and potentially measure the impact of a food access intervention, subsequently seeing the impact of environmental change on health equity.

Food access assessments are associated with community vitality<sup>13</sup>. Since convenience and affordability are two primary drivers in food selection, the challenge for many communities is to create an environment that offers easy access to both healthy foods and assures that residents have the resource to purchase those foods. Primary assessment components include observing the availability, quality, and price of food products in retail food outlets (grocery stores or convenience stores). When mapped, these results provide a spatial review of where access may be difficult.

#### **Douglas County Nutrition Environment Measures Survey Assessment – Methods**

Nutrition Environment Measures Survey (NEMS), an evidence-based system developed by Karen Glanz and James Sallis at Emory University to assess food availability, was designed to quantify what a consumer encounters in their retail food outlets. The Bureau of Sociological Research (BOSR) at the University of Nebraska-Lincoln assisted in designing the tool and evaluation strategy, as well as performed the data analysis.

The original survey tool developed by Emory University was modified to better reflect the unique components of healthy access within both urban and rural areas of Nebraska. The modified instrument, known as the “Nebraska NEMS tool” provided a point-in-time observation of the availability of healthy food options in the following areas: fruits, vegetables, meat and meat alternatives, whole grains, milk, and snacks. The instrument was designed to only examine

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<sup>13</sup>Examining the impact of food deserts & food imbalance on public health in Birmingham, AL. (2012, July). Retrieved from <http://www.revbirthingham.org/wp-content/uploads/2012/10/Bham-Food-Desert-Imbalance-Brochure-redux.pdf>

grocery and convenience stores. Other venues for the procurement of healthy foods (e.g. farmers' markets, specialty stores, restaurants, etc.) were not assessed.

The NEMS utilizes trained observers to assess retail food outlets. Community volunteers were trained to use the Nebraska NEMS tool to record their observations of a store's availability, quality, quantity and price of the items listed on the NEMS tool. The community volunteers were then equipped with survey packets for each store that included the Nebraska NEMS tool, an informational letter for the store manager, and a business reply envelope.

DCHD obtained the "Table 1A" list with all the names and locations of licensed retail grocery and convenience stores located in Douglas Counties. The list was culled to remove specialty and secondary food outlets, or single food venues (e.g. candy or home stores, farmers markets) that did not meet the criteria of variety and types of food sold.

Two methods of scoring stores were used in Douglas County NEMS assessments. One method calculates a total score for each store based on availability, price, and quality. The second method took into consideration access (i.e. the number of "healthy" food choices belonging to each of the five food groups). Only the second method, "healthy access" which denotes healthy food availability, will be discussed for the purpose of this report. Access is not defined as the availability of a single item in a food group category, but rather observers note the number of food choices offered in a food group.

For each food group, "healthy access" was defined by slightly different criteria; each set was based on the number of servings an individual would need to meet current dietary recommendations. The presence of one fresh fruit and vegetable option and one other form (canned or frozen in 100% juice/no sugar/no sauce) was considered to be "healthy access" and thus received a healthy fruit/vegetable score. In order to have "healthy access" to meat and meat

alternatives, a store needed two or more options of healthy proteins (e.g. lean ground beef, tuna in water, and/or beans). Healthy access criteria for whole grains consisted of three or more options available (e.g. bread and/or tortillas and whole-grain cereal or pasta/rice). Healthy access to milk included having skim and/or 1% available. Clear criteria were also set regarding product specifications such as: no added sugar, salt, sauces, dressing or gravy. As this process was a modification from the researched NEMS process, the assessment tool was reviewed by the Emory NEMS staff and reported to be feasible for the assessment.

### **Douglas County Nutrition Environment Measures Survey Assessment – Health Impact Assessment Methodology**

Indicators from the San Francisco Department of Public Health’s Healthy Development Measurement Tool (HDMT) and the measurement guide from the Centers for Disease Control and Prevention (CDC) *Recommended Community Strategies and Measurements to Prevent Obesity in the United States* produced the rationale for using the one-mile radius as the local Health Impact Assessment guideline in Douglas County.